BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD OF DIRECTORS MEETING

May 15, 2015

Correspondence and media coverage of interest between April 10, 2015 and May 13, 2015

Media Coverage

Drought:

Date: May 13, 2015
Source: Sacramento Bee
Article: Despite cutbacks, Sacramento Valley ponders big water sale in drought

Date: May 13, 2015
Source: LA Times
Article: Before we can address the California drought, we need a geography lesson

Date: May 12, 2105
Source: Capital Public Radio
Article: California Lawmakers Receive Grim View of Drought

Date: May 12, 2015
Source: KTVU
Article: Hetch Hetchy levels a major concern for water officials

Date: May 12, 2015
Source Sacramento Bee
Article: California urban water cuts are matter of "self-interest," state says

Date: May 11, 2015
Source: SJ Mercury News
Article: How the state's new water conservation rules affect you

Date: May 5, 2015
Source: NBC News
Article: California Regulators Approve Unprecedented Water Cutbacks

Date: May 6, 2015
Source: ACWA Water News
Article: Gov. Brown Tells Water Managers They are "On the Front Lines" of Drought

Date: May 6, 2015
Source: SJ Mercury News
Article: State water board passes first mandatory urban water limits in state history

Date: May 4, 2015
Source: Wall Street Journal
Article: Latest Victim of California's Drought: Water bonds

Date: April 21, 2015
Source: SM Daily Journal
Article: Disparity in conservation: San Mateo County residents have varying water cut mandates, efforts

Water Supply:

Date: May 13, 205
Source: CNBC.com
Article: California landowners resist efforts to monitor groundwater

Date: May 7, 2015
Source: SF Gate
Article: Tapping the ocean for drinking water: State lays down the law

Date: April 28, 2015
Source: SJ Mercury News
Article: San Jose, Santa Clara mayors drink recycled sewage to push expanding reclaimed water

Date: April 18, 2015
Source: SF Chronicle
Article: New normal: Scientists predict less rain from here on out

Date: April 10, 2015
Source: Sacramento Bee
Article: Big north-to-south California water sale dries up

Proposal to Drain Hetch Hetchy

Date: May 8, 2015
Source: Wall Street Journal
Article: Hetch Hetchy Makes San Franciscans a Touch Tetchy

Date: May 5, 2015
Source: NBC News
Article: California Drought: Century-Old Fight Over Hetch Hetchy Simmers On

Date: April 27, 2015
Source: Fresno Bee
Article: Earth Log: SF groups oppose lawsuit aimed at emptying Hetch Hetchy

Date: April 21, 2015
Source: The Union Democrat
Article: Group sues over Hetch Hetchy

Despite cutbacks, Sacramento Valley ponders big water sale in drought
Sacramento Bee | May 13, 2015 | Dale Kasler and Phillip Reese

Even as they cope with their own cutbacks, several Sacramento Valley water agencies are contemplating major water sales to huge farming interests south of the Delta.

Some of the water would be sold for as much as $700 an acre-foot, a princely sum that reflects the increasing desperation among some Central Valley farming operations in the fourth year of California's drought. The total volume of water likely changing hands this year could approach 200,000 acre-feet or more, or about 65 billion gallons.

Farmers are engineering most of the shipments – namely rice farmers in the Sacramento Valley who are moving water to growers on the west side of the San Joaquin Valley, where water rights are less secure and shortages more severe.

Urban water agencies in greater Sacramento are getting involved, too. Notably, the Placer County Water Agency and El Dorado Irrigation District have made deals to ship billions of gallons of water out of their communities.

While the dollars are tempting, area officials say water sales are also a means of helping their fellow Californians. Farmers south of the Delta rely heavily on the state and federal plumbing systems that move water from north to south. Those deliveries have been well below normal for the last two years.

"They are really hurting for water, in much worse circumstances than we are," said Bill Busath, the city of Sacramento's utilities director. The city is considering a sale, although Busath said completing a deal this year is unlikely.

Most of the water under discussion would go to the Westlands Water District, an agricultural powerhouse in Fresno County. But some would be sold to urban districts in the Bay Area.

Urban sellers are diving into water deals even as they wrestle with strict orders by state regulators to slash deliveries to their own customers by an average 25 percent over the next nine months. The mandatory cutbacks are 28 percent or more for most Sacramento agencies.

The agencies said they would sell only surplus water and wouldn't jeopardize customer supplies.

"We are not going to release any water if it means damaging our own customers," said Einar Maisch, general manager of the Placer County agency, which serves Rocklin, Loomis and Auburn. Placer plans to sell 12,000 acre-feet of water to the East Bay Municipal Utility District at roughly $500 an acre-foot.

Urban agencies acknowledge the sensitivity of selling water while ordering their residents to consume less. "There's a political reality for an elected official saying, 'Our customers have to cut back, and we're looking at selling water,' " said Rob Roscoe, general manager of Sacramento

Suburban Water District. The district has been mulling offers from buyers south of the Delta but hasn't made any decisions.

Some districts are selling nearly as much water as they're saving. El Dorado is supposed to cut use by 8,600 acre-feet under the state's mandate. It has a deal to sell up to 6,000 acre-feet to the Westlands Water District, although it still needs regulatory approval.

El Dorado is trying to move water it just got its hands on. Five months ago, after years of negotiations with the U.S. government, El Dorado obtained the right to take water from Folsom Lake in anticipation of future growth. The district won't need the water for several years. It risks losing the supply under state law if it doesn't put it to "beneficial use," said El Dorado's general counsel Tom Cumpston.

Selling the water to someone who needs it constitutes beneficial use, Cumpston said. The sale price to Westlands is a whopper: $700 an acre-foot.

Some deals won't materialize; a big sale to the Metropolitan Water District of Southern California fizzled just a month ago. But at a time of profound shortage, money speaks loudly in California water. Last year water was fetching $300 to $400 an acre-foot. Now those prices seem quaint.

"The basic laws of supply and demand," said Westlands General Manager Tom Birmingham. Despite offering upward of $665 an acre-foot for water, half of Westlands will go unplanted this year, he said.

Water sales remain controversial. To critics, they raise the specter of disadvantaged communities pumped dry to quench the thirst of wealthier users. This week a group of environmental advocates and Delta water agencies went to U.S. District Court in Sacramento, filing suit in an effort to block one of the major water sales under consideration.

In that deal, the U.S. Bureau of Reclamation gave approval for Sacramento Valley customers of the vast federal plumbing network known as the Central Valley Project to ship as much as 500,000 acre-feet of water to CVP customers south of the Delta, every year for a decade. The actual amount likely to be sold this year is far less, maybe around 200,000 acre-feet.

The deal's opponents say the transfers would devastate the Sacramento Valley economically and environmentally, and push water through the Delta in ways that would harm its fragile ecosystem.

Among the problems: Farmers in the Sacramento Valley would have to idle thousands of acres to make the water available. "You can't say that when you fallow, it has no impact," said Barbara Vlamis of AquAlliance, one of the plaintiffs in the suit.

Advocates for the deal say they take the lawsuit in stride. "This is the water world," said Dan Nelson, executive director of the San Luis & Delta-Mendota Water Authority, one of the proposed buyers. "It's not a surprise."

Water sales are about money, of course, but other issues figure into sellers' considerations. Placer County made an agreement years ago that brought additional water from the American River, so long as the agency agreed to sell some of its water in dry years. Placer sold water each of the past two years and is selling more this year.

"This is hard," Maisch said. "We get questioned about this every time we do it. It's not an easy story to communicate in 30 seconds."

The Glenn-Colusa Irrigation District, which takes in a major rice-growing region north of Sacramento, is selling water at the same time many of its farmers are idling their fields. Because of shortages in the system, Glenn-Colusa is losing a quarter of the water it's supposed to get from the Central Valley Project. The district is selling 10 percent of its remaining allotment to groups south of the Delta.

While the price is an attractive $665 an acre-foot – for water that costs the district $120 – General Manager Thad Bettner said Glenn-Colusa's growers have little choice but to sell.

Under a recent agreement with regulators, farmers will take delivery of much of their CVP water later in the year than normal to protect Chinook salmon runs. That means the water will arrive too late to plant. Rather than simply lose it to the river, the farmers are selling instead.

"We were told, 'You can transfer part of it or you can lose it,' " Bettner said. "That was the option that was given to us."

# # #

(This page intentionally left blank.)

Before we can address the California drought, we need a geography lesson
LA Times | May 13, 2015 | George Skelton

Many of us could use a refresher course in California geography as we debate how to manage the drought and prepare for an uncertain water future..

For starters, calling the hardest-hit farm region the Central Valley is much too simplistic.

Second, agriculture per se is not the issue — not the culprit guzzler. Rather, it's the location of the agriculture, which gulps 80% of California's developed water. Almonds, for example, make a lot of sense in some areas; a lot less in others.

Too often we try to wrap it all into convenient, simple packages — Central Valley and nut orchards — when more specificity is required to grasp the nub of the problem.

What part of the vast Central Valley? How dry is it and what's being grown there?

Let's begin with the basics. The Central Valley stretches 450 miles from Bakersfield north to Redding and is divided into significantly different hydrology regions that affect crop growing. Actually, they should affect it more, but farmers are free to plant whatever they want.

The long valley essentially is divided into two valleys — the San Joaquin and the Sacramento. It's the much drier San Joaquin that usually is referred to casually as the Central Valley — and sometimes a looming dust bowl.

The San Joaquin Valley is drained by the San Joaquin River, which usually runs dry by summer downstream from around Fresno because so much water is diverted for agriculture. It resumes running again farther north when it's replenished by tributaries.

The southernmost part of the San Joaquin Valley is the very dry Tulare Basin. There, Tulare Lake once was the largest freshwater lake west of the Mississippi but dried up a century ago because of agriculture diversions.

The Sacramento Valley is drained by the Sacramento River, which never runs dry. It has the second strongest water flow in the West, behind only the Columbia.

The San Joaquin and Sacramento rivers merge in the delta, east of San Francisco, where water is pumped south through federal and state aqueducts to valley farms and cities, including Los Angeles. What water's left flows through San Francisco Bay to the sea, often carrying salmon for the coastal fishing industry.

The delta also is part of the Central Valley. But it has about as much in common with the San Joaquin as Long Beach does with Lancaster, although both are in L.A. County.

The importance in all this is that it's much drier — and more water-gulping for crops — in the southern Central Valley than in the north.
Look how the average annual rainfall increases from south to north: 6.5 inches in Bakersfield, 11.5 in Fresno, 18.5 in Sacramento, 26.7 in Chico, 34.6 in Redding. That's a 28-inch spread from very dry to very wet.

Temperatures don't vary as dramatically, but it is hotter in the south than in the north. July high and low thermometer readings in Bakersfield are 97 and 71, in Sacramento 92 and 58, in Chico 94 and 61. That means less evaporation of irrigation water as you move north.

It all calculates to a greater need for irrigation in the south than in the north.

"You and I are going to drink more water in Bakersfield than in Colusa," says Daniel Sumner, director of the Agricultural Issues Center at UC Davis. "Plants can store up more water in the north."

Numbers have been compiled by Josue Medellin-Azuara, senior researcher at the UC Davis Center for Watershed Sciences. He figures it takes 4 acre-feet of irrigation water to grow an acre of almonds or pistachios in the Tulare Basin, where nut orchards have expanded the most in the last decade.

In the rest of the San Joaquin Valley, it requires 3.4 acre-feet. But in the Sacramento Valley, these nuts need only 2.4 acre-feet. That's a difference of roughly one acre-foot, or nearly 326,000 gallons, enough to supply two households for a year.

There are 916,000 acres of almond and pistachio trees in the semi-arid San Joaquin, Medellin-Azuara says, but only 162,000 acres in the wetter Sacramento Valley.

The Sacramento used to be the main producer of these nuts, but when the federal and state water projects brought irrigation to the San Joaquin, the increasingly profitable and exported crops took off there.

Stone fruit — apricots, peaches, cherries — also require more irrigation in the south than in the north, 3.8 acre-feet compared with 2.8. Same with alfalfa, nearly 5 acre-feet contrasted with 4.

There's also the problem in the south of over-pumping aquifers. In parts of the San Joaquin, the groundwater table has plunged 150 feet in the last 15 years and the land itself is sinking a foot a year.

Not so in the Sacramento Valley. "It's in really good shape," says Jeffrey Mount, a senior fellow at the Public Policy Institute of California and former director of the UC Davis watershed center. "When it rains again, that valley will recover much more quickly."

In past columns, I have suggested that the state consider regulating crops based on their water demands and location. Gov. Jerry Brown flatly rejects that notion.

"You're not the only person saying that," Mount told me. "But it's not said in polite company."

The regulating will happen indirectly anyway within the next generation, he says, when new groundwater controls are implemented.

That can't happen soon enough.

###

California Lawmakers Receive Grim View Of Drought
Capital Public Radio | May 12, 2015 | Amy Quinton

Sacramento, CA - The picture of the drought is bleak. Water managers told lawmakers almost 2,000 wells are dry. They've observed groundwater levels drop by more than two feet in over 40 percent of measured wells this spring.

Lester Snow with the California Water Foundation says the state needs "fundamental policy reform." He also says there is too much negativity and blame. He says there is no single solution to the drought.

"We ban almonds, we kill the Delta smelt and our water problems are gone. Then the other image in the paper is we crowd source a pipeline to the Northwest or the Great Lakes and all our problems are over," says Snow. "These are very devastating images to lay out to the public."

Snow and other water policy makers say the state needs better data collection of the water that is available.

Lawmakers also want Governor Jerry Brown's administration to speed up drought relief efforts. Department of Water Resources Director Mark Cowin told lawmakers it will be difficult to get water storage projects off the ground quickly with money from the water bond voters approved last fall.

"I'd say none of them are ready to be submitted to the Water Commission at this point," says Cowin. "First of all, the Water Commission, per the legislation, has to go through a fairly extensive complicated rule-setting process to define how the public benefits will be measured and compared."

Cowin says that process won't be complete until late next year. Even then, storage projects can't use state bond funds until local governments find a way to pay for 75-percent.

# # #

(This page intentionally left blank.)

Hetch Hetchy levels a major concern for water officials
KTVU | May 12, 2015

YOSEMITE NATIONAL PARK (KTVU) -- With California in a record drought, all eyes are on the Bay Area's water supply with rising concerns about the health of a key reservoir that serves millions of people.
The images and message from the April snow survey were alarming. The snowpack was at a record low, and one of the major Bay Area reservoirs is feeling the impact.

Hetch Hetchy collects melting snowpack and taps into gravity to send water from Yosemite -- 165 miles to our faucets -- to the Bay Area.

85 percent of the region's supply comes from the Sierra, serving San Francisco, most of San Mateo and parts of Alameda and Santa Clara counties. Over 2 million people rely on this water source.

While park visitors walk on the dam, KTVU'S Mark Tamayo hopped on a boat to see how the extreme drought was impacting Hetch Hetchy. One might think a reservoir that relies on snow would be empty. But the reservoir was actually quite full.

SFPUC's Assistant General Manager For Water Steve Ritchie says that even though the reservoir is 70 percent full, there should be a lot more.

We're floating on about 80 billion gallons of water right now, explained Ritchie. As far as the water goes, we'll go up here a little ways, [we] won't see any snow up in the peaks.

Bob Slater has been a watershed keeper at Hetch Hetchy for nine years, seeing both the highs and lows.

On a good water year, that waterfall almost directly into the reservoir, said Slater. When it's running hard and the lake is full, you don't even see these rocks

Wapama Falls is flowing at 2,300 gallons per second. But during a normal year, it would be five times that rate

As the ride continues, more evidence of the drought becomes visible. Dark areas on granite where falls should be flowing are dry, rock structures that should be submerged are above water and the defined boundary of the high water mark.

We reach an area seen by few; the connection between a river and reservoir.

This cup of water will take about 3 days to make it to the Bay Area. Nearby, the Tuolumne River provides the main source of snowmelt for Hetch Hetchy. On an average year they'll fill up the reservoir three times.

This year it won't happen once.

The remaining snow is melting and adding to the supply. By June, reservoir storage will crest at 80 percent of capacity.

It sounds like a lot, but we're actually still borrowing from history. The current supply includes water from the past couple of winters.

"Based off the 1987 through 1992 drought, we started planning as if we might have 8 and half years of drought," explained Ritchie. "You know a series of dry years that we might have to live through and so we're using that planning that we have done in the past to help us manage through what is the reality of this drought."

Hetch Hetchy is just one piece of the puzzle. The entire system supplying the Bay Area -- which includes five more reservoirs and a water reserve -- is only at 54 percent of capacity.

Hoping for a productive winter is not enough. The planning is happening now and that could include more cuts.

"If we have next year as bad as this year, I'm sure we will go to mandatory rationing. Because we'll be in a more severe condition and we will have to assume that it's going to get worst, Slater said.

The falls will soon dry up and the river just a trickle, leaving this reservoir in a vulnerable place. Each turn of the faucet in the bay area will determine what it will look like next year if the drought continues.

# # #

California urban water cuts are matter of 'self-interest,' state says
Sacramento Bee | May 12, 2015 | Alexei Koseff

Facing resistance to sweeping mandatory restrictions approved last week for urban water districts, California water board Chair Felicia Marcus defended the cuts as a matter of "self-interest" at a Senate hearing on Tuesday.

"The reason for cutting back in urban California is to build resilience in urban California," said Marcus, who has spearheaded the official response to California's severe drought. "It's not about sharing the pain. It's about self-interest in making a judgment that we have to act in urban California as if won't rain for another couple years."

A historic decision to mandate a 25 percent reduction in urban water use statewide has been met with pushback from communities that will face the biggest cuts, regions that have conserved historically and citizens angry that the agriculture industry, the state's primary water consumer, wasn't included.

At Tuesday's hearing, Sens. Hannah-Beth Jackson, D-Santa Barbara, and Bill Monning, D-Carmel, questioned the reductions ordered in their Central Coast districts, which have among the lowest per capita water use in the state.

"Fairness is always in the eye of the beholder," Marcus said.

She asked people to stop pointing fingers and "step up as Californians in solidarity to those folks in rural communities and those farmers in rural communities who grow the food we eat."

While urban California still has time to change its habits and adjust to worsening drought conditions, Marcus said, there are places in the Central Valley where the state is trucking in water. More than 1,900 wells have dried out, primarily in Tulare County, and water levels have dropped by greater than 2 feet in more than 40 percent of the wells measured by the state.

"Agriculture, rural communities have borne the brunt of this," Marcus said. "Asking people to cut back, take shorter showers and put their lawn on a water diet is very different than fields that are fallow and thousands of people out of work."

# # #

(This page intentionally left blank.)

California drought: How the state's new water conservation rules affect you
SJ Mercury News | May 11, 2015 | Paul Rogers

The administration of Gov. Jerry Brown last week enacted historic new water conservation rules in response to California's drought. The goal is to cut statewide water use by urban residents 25 percent over the next nine months to help preserve water supplies in case the drought continues through next winter.

Q Am I affected?

A Yes. The rules apply to all 38 million California residents.

Q I've been hearing lots of confusing details. What do I need to know?

A There are basically three types of rules. Think of them as three buckets: First are statewide rules that ban water wasting. They apply to everyone. Second are mandatory conservation targets for cities and water districts. And, finally, there are local rules, which vary from place to place.

Q OK, let's start with the water-wasting rules. What can't I do?

A Get out those brooms. Nobody in California can use potable water to wash off sidewalks or driveways. Also prohibited is watering landscaping so much that the water runs off into a street, driveway, sidewalk or a neighbor's property. People also can't wash cars with hoses that don't have shut-off nozzles. It's also illegal to water a lawn within 48 hours of "measurable" rainfall. That can mean as little as a hundredth of an inch. Restaurants are banned from serving water unless customers request it. And hotels must post signs in each room offering guests the option to not have towels and linens washed daily. It's also now illegal to irrigate grass on street medians with potable water.

Q Are there exceptions?

A A few. The rules allow for washing pavement to address immediate "health and safety" needs, such as the way that some cities power wash sidewalks to remove human and animal waste.

Q Are there penalties?

A Yes. Violators can be fined up to $500 per offense, although enforcement is up to each city.

Q How can I report violators?

A Generally speaking, call your city water department or go to its Web page. In Santa Clara County, anyone seeing violations can call a hotline run by the Santa Clara Valley Water District. The number is 408-630-2000. Residents can email reports of water waste to drought@valleywater.org. In Alameda and Contra Costa counties, customers of East Bay Municipal Utility District can call 866-403-2683 or go to www.ebmud.com/reportwaterwaste. For customers of the Contra Costa Water District, reports can be made at 925-688-8044 or by

clicking on the "report water waste" button at the district's website, at http://ccwater.com. Finally, residents in Fremont, Newark and Union City served by Alameda County Water District can call 510-668-4200. Residents of San Mateo, San Benito and Santa Cruz counties should call their local water district or city water department."

Q Got it. What about the second bucket -- those mandatory cuts in water use?

A Last Tuesday, the State Water Resources Control Board passed rules that divide the 410 largest cities, water districts and water companies in California into nine tiers, based on their residential per capita water use from last fall. They will have to meet the targets, which are compared with their 2013 baseline use, or face state fines of up to $10,000 a day. Communities with low per-capita use -- such as Santa Cruz, Hayward and San Francisco -- will have to reduce water use by only 8 percent because they already have been conserving. Places with high per-capita use, such as Hillsborough, Beverly Hills and Bakersfield, will have to cut 36 percent. San Jose must cut 20 percent, EBMUD 16 percent and Contra Costa Water District 28 percent. To see the full list of which cities and water districts must cut by how much, go to www.waterboards.ca.gov and click on "Emergency Regulations Development to Achieve 25% Conservation." Then click "Proposed Urban Water Supplier Usage Tiers."

Q How will communities meet those targets?

A It will be up to each one to decide. Many will increase public outreach and offer increased rebates for people who buy water-efficient appliances. Most will limit lawn watering, usually to two days a week. Others will hire "water cops" to write tickets, while others will impose penalties and raise rates on people using more water than a set allowance. Some places have gone further. San Jose last month banned all washing of cars at people's homes -- regardless of whether hoses have nozzles -- and all filling of new swimming pools and hot tubs, for example.

Q What about the local rules? Where can I find out about the ones that affect me?

A Check with your water department, or if you receive a bill from a private water provider, check with the company. Most providers will be mailing out notices and updating their websites with local rules. Many already have begun that process.

Q But don't farmers use most of California's water? Why do cities need to save so much?

A Farmers do use 80 percent of the water consumed by people in California. But much of their water cannot be transferred easily to cities, either because they have legal rights to it or because of infrastructure issues. Water that an almond grower in Modesto doesn't pump from a well on his farm, for example, can't be shipped to the Bay Area or Southern California. And many of the state's farmers already have been hit with huge water cuts, losing 80 to 100 percent of their supplies from the Sacramento-San Joaquin River Delta because of state and federal drought cutbacks. Most important, much of the water that urban residents save is from local reservoirs and aquifers. That's water they can use next year or beyond.

Q How hard is this going to be?

A It's not difficult for most people to save a significant amount of water. Lawns use 50 percent of all residential water in the summer. Cut your lawn watering in half, and you've saved 25 percent. The cuts will no doubt be harder for apartment dwellers. But they should check for indoor leaks and get flow restrictors for their showers and sinks. Many cities and water districts hand them out for free. Apartment residents might also want to encourage their landlords to replace old appliances and toilets. The landlords will often be eligible for sizable rebates.

Q Where can I get more information?

A To learn more about the rules, go to www.ca.gov/drought, or for water-saving tips, go to www.saveourwater.com.

###

(This page intentionally left blank.)

California Regulators Approve Unprecedented Water Cutbacks
NBC News | May 5, 2015 | Matt DeLuca

SACRAMENTO, Calif. — California water regulators adopted sweeping, unprecedented restrictions Tuesday on how people, governments and businesses can use water amid the state's ongoing drought, hoping to push reluctant residents to deeper conservation.

The State Water Resources Control Board approved rules that force cities to limit watering on public property, encourage homeowners to let their lawns die and impose mandatory water-savings targets for the hundreds of local agencies and cities that supply water to California customers.

Gov. Jerry Brown had pushed for the more stringent regulations, arguing that voluntary conservation efforts have so far not yielded the water savings needed amid a four-year drought. He ordered water agencies to cut urban water use by 25 percent compared with 2013, the year before he declared a drought emergency.

"It is better to prepare now than face much more painful cuts should it not rain in the fall," board Chairwoman Felicia Marcus said Tuesday as the board voted 5-0 to approve the new rules.

Although the rules are called mandatory, it's still not clear what punishment the state water board and local agencies can or will impose for those that don't meet the targets. Board officials said they expect dramatic water savings as soon as June and are willing to add restrictions and penalties for agencies that lag.

But the board lacks staff to oversee each of the hundreds of water agencies, which range dramatically in size and scope. Some local agencies that are tasked with achieving savings do not have the resources to issue tickets to those who waste water, and many others have chosen not to do so.

Despite the dire warnings, it's also still not clear that Californians have grasped the seriousness of the drought or the need for conservation. Data released by the board Tuesday showed that Californians conserved little water in March, and local officials were not aggressive in cracking down on waste.

A survey of local water departments showed water use fell less than 4 percent in March compared with the same month in 2013. Overall savings have been only about 9 percent since last summer.

Under the new rules, each city is ordered to cut water use by as much as 36 percent compared with 2013. Some local water departments have called the proposal unrealistic and unfair, arguing that achieving steep cuts could cause higher water bills, declining property values and dissuade projects to develop drought-proof water technology such as desalination and sewage recycling.

The board again Tuesday rejected calls to create easier targets for communities in drier areas or for cities that have been conserving since before the drought.

An economic analysis of the water board's proposal commissioned by the board estimated that private water utilities and local water departments would lose a total of about $1 billion in revenue through lost water sales if they meet the board's targets, meaning they are likely to raise prices to make up the difference.

Brown said last week he would push for legislation authorizing fines of up to $10,000 for extreme wasters of water, but he needs legislative approval to do so and no bill has been introduced. Another tool — tiered pricing, in which the price rises as water use goes up — is in question after a court struck down water rates designed to encourage conservation in San Juan Capistrano in Orange County.

# # #

Gov. Brown Tells Water Managers They Are "On the Front Lines" of Drought
ACWA Water News | May 6, 2015 | Pamela Martineau

Speaking to an overflowing crowd at ACWA's spring conference luncheon today, Gov. Jerry Brown told water managers they are "on the front lines" of the drought and his administration is "here to back you up."

In a wide-ranging, 20-minute address that touched on everything from climate change to threatened species in California, Brown sent the message to water managers that the state is in the midst of changing times in the water arena and stakeholders must rise to the challenge.

Brown also thanked water managers for stepping up to react to new regulations as the state grapples with drought.

"We just kind of launch the missile and you do the particularizing and talk to your neighbors and get them to do it," Brown said of the drought-related proposals coming from his administration. "And I really want to thank you for that."

Brown stressed that what the state does over the next few years in the arena of water will have lasting implications for generations to come. He said water leaders worked in partnership with the Administration on passage of Proposition 1 and should continue to work together on its implementation which is intended to be done within the context of the California Water Action Plan.

Brown also cautioned that droughts are a "part of California's past and future" and with climate change, the state can expect to see more of them.

"Things are changing and we need to change," said Brown. "This drought is the catalyst for that."

Saying water managers will need to continue to be creative to develop strategies to maximize the benefits of water, Brown stressed that his administration wants to "make it easier for you to build things," such as water projects.

Brown also referenced the importance of securing the state's water conveyance system through California Water Fix, the project formerly known as the Bay Delta Conservation Plan. He said several governors have been working on the issue for decades and his administration estimates it has put in over 1 million staff hours on the project.

He told critics of the project: "Until you put one million hours into it – Shut up, because you don't know what you are talking about."

California State Treasurer John Chiang followed the governor and spoke of the austerity and transparency measures that have been put in place since the economic downturn. He also talked

of how the state has rebounded and its higher bond rating reflects the increased confidence investors have in California.

“We have the most robust economic recovery today in the United States of America,” said Chiang.

Chiang told water managers to seek help from his staff if they are looking for advice on finding the best funding for projects.

The noontime luncheon is part of ACWA’s Spring Conference & Exhibition taking place at the Sacramento Convention Center and surrounding hotels through Friday. Numerous high-level water manages from throughout the state are scheduled to speak at the event.

At a breakfast address earlier in the day, Assembly Member Marc Levine (D-San Rafael), chair of the Assembly Water, Parks and Wildlife Committee, shared his perspective on issues the Legislature may address this year on water. He stressed the importance of working together on implementation of the water bond approved by voters in 2014, as well as the implementation of the Sustainable Groundwater Management Act.

"We all need to be actively involved if we are going to get the greatest benefit out of this water bond," he said.

# # #

California drought: State water board passes first mandatory urban water limits in state history

SJ Mercury News | May 6, 2015 |Paul Rogers

SACRAMENTO -- Bringing California's historic drought directly to every home and business in the state, the administration of Gov. Jerry Brown on Tuesday imposed the first mandatory urban water conservation rules in state history.

Turning aside complaints that the targets are too tough, the State Water Resources Control Board approved the rules by a 5-0 vote after a marathon, 10-hour meeting, saying that requests for voluntary conservation haven't worked sufficiently to save enough water to keep California from running perilously low if the drought drags on for years to come.

"We're in an emergency," said Felicia Marcus, chairwoman of the board. "It might not rain or snow much this year or next year. It is better to be safe than sorry."

In this photo taken Thursday, April 16, 2015 Gov. Jerry Brown talks with reporters after a meeting about the drought at his Capitol office in Sacramento,

In this photo taken Thursday, April 16, 2015 Gov. Jerry Brown talks with reporters after a meeting about the drought at his Capitol office in Sacramento, Calif. (Rich Pedroncelli/AP)

The rules take effect June 1 and will remain in effect until next February. Although the impacts will vary by community, generally speaking they will result in broad new water restrictions for most of the state's 38 million residents, including limits on lawn watering, bans on various types of water use such as washing cars or filling pools in some places and, in some communities, water cops writing tickets for people who waste water or water their lawns on the wrong days.

Under the rules, every city and water district with more than 3,000 connections was given a mandatory water conservation target ranging from 8 percent to 36 percent, based on their per capita use last year. The idea, board members said, was to reward communities that already have been conserving water, while placing more of a burden on those who consume disproportionately more.

It will be up to each community to figure out how best to meet its target.

Communities with the lowest per capita use, such as San Francisco, Santa Cruz and Hayward, were assigned the lowest target of 8 percent, and those with the highest use, like Hillsborough, Bakersfield, Beverly Hills and Atherton, were given the highest mandatory target of 36 percent.

Cities and water districts not meeting their targets will be subject to state fines of up to $10,000 a day later this summer.

In the Bay Area, the San Jose Water Company was given a target of 20 percent. The East Bay Municipal Utility District, which serves 1.3 million people in Alameda and Contra Costa

counties, was assigned a 16 percent target, and the Contra Costa Water District was given a 28 percent target.

The board's decision came after it released new figures Tuesday showing how the state continued to lag in its conservation efforts, falling far short of Brown's mandate that communities cut water use by 25 percent.

Statewide, the largest 410 cities and water districts reduced water use by only 3.6 percent in March, compared to the baseline year of 2013.

"I keep thinking that we are in some stages of Elisabeth Kübler-Ross -- grief, denial, bargaining, and eventually we get to acceptance, and that can't come too soon," said Marcus.

Cumulatively, since detailed record keeping began last June, California's urban residents have cut water use 8.6 percent, said Max Gomberg, a staff member for the board.

"We have done well, but we have a long way to go," he said

During Tuesday's meeting, more than 50 people testified, including representatives from small towns, the state's largest cities and some of its leading industries. Many said the rules were too strict, and should be changed in various ways, such as allowing places with hotter weather to use more water, or allowing easier standards for cities with ample groundwater storage.

"This will force me to be in a position to choose between meeting my conservation standard and taking care of public safety and public health," said Marc Marcantonio, general manager of the Yorba Linda Water District in Orange County.

The district's customers cut water use by only 5 percent last year and have a residential use of 220 gallons per person per day, double the state average. But Marcantonio said the community is next to Chino Hills State Park, which has high fire danger so it should be given relaxed standard.

Under questioning from Marcus, however, he acknowledged that only 10 gallons per day of the district's per capita water use is due to fire reduction efforts.

From the other end of the state, city officials from Lincoln, a town in Placer County that used 251 gallons per person per day and is also facing a mandatory 36 percent reduction, said the target was too tough.

"We are going to have to require our water users to limit their watering to one day a week at the maximum," said Jennifer Hansen, the city's public services director. "We will be seeing brown lawns. We will be seeing lots of vegetation dying."

Large Bay Area water districts, however, said they support the rules.

"We think the targets are achievable," said Marty Grimes, a spokesman for the Santa Clara Valley Water District. "Our main concern is keeping our groundwater levels from dropping further."

Added Tyrone Jue, a spokesman for the San Francisco Public Utilities Commission, which supplies water to 2.6 million Bay Area residents through the Hetch Hetchy system: "The new mandatory targets are going to be tough but are a necessity given this historic drought."

Some cities already have begun to put in place rules to meet the targets. Last month, San Jose banned all home car washing and filling of swimming pools and limited lawn watering to two days a week. East Bay MUD limited lawn watering to two days a week and passed a surcharge for excessive water use. Santa Cruz imposed a rationing system that gives each house 10 units of water a month, with a $50 per unit cost above the 11th unit.

Gomberg said that an economic study by the board found that the new rules will cost cities, water districts and private water companies at least $600 million from lost water sales. That will have to be made up for in higher rates, he said, adding that the state doesn't have much choice.

"It's not an easy trade off. But this is a sort of desperate-times approach that's being taken here."

# # #

(This page intentionally left blank.)

Latest Victim of California's Drought: Water Bonds
Investors steer clear of debt issued by water utilities
Wall Street Journal | May 4, 2015 | Aaron Kuriloff

California's drought is starting to spread to the market for bonds issued by water utilities, long considered one of the safest types of debt sold by state and local governments.

Some investors are steering clear of the bonds from hard-hit areas of the U.S. west, amid concerns that restrictions on water use will drive down water-authority revenue. Some authorities may have a tough time raising rates to offset that lost income.

If shortages persist, credit ratings may weaken and prices for outstanding bonds fall, according to analysts and rating firms.

California water and sewer bonds lost value in April for the second month in three, falling 0.61% after Gov. Jerry Brown imposed mandatory water restrictions. All California municipal bonds posted a 0.55% decline for the month, counting price moves and interest payments, according to Barclays PLC.

California is in its fourth year of drought, one of the worst on record for the nation's most populous state. It is costing billions of dollars in losses in its agricultural sector and prompting the first-ever mandatory statewide cutbacks in water use.

It is also a rare fissure in one of the most-secure and widely traded sectors of the $3.7 trillion municipal-bond market. During last year's rally in bonds, water and sewer debt nationwide outperformed the market, rising 9.7% compared with 9% for tax-exempt bonds overall, according to Barclays. California water and sewer agencies have issued about $28.8 billion in bonds since 2010, according to Thomson Reuters.

Water-utility bonds seldom default because they're typically backed by residents' payments on an essential service. And so far the drought hasn't kept water authorities from tapping the debt market.

But the persistent water shortages show how a market prized for safety and stability can contain hidden pockets of risk, some investors said.

"The way investors have looked at water in California in the past needs to go through some evolution," said Michael Johnson, co-chief investment officer at Gurtin Fixed Income Management LLC, in Solana Beach, Calif.

Mr. Johnson said heavy investor demand for California debt of all types has raised the prices of most water bonds. That means investors may be overpaying for debt from districts with growing but unacknowledged financial problems.

His firm, which manages about $9 billion, has avoided some authorities facing challenges such as limited water storage or small financial reserves.
An April report by Moody's Investors Service warned investors that the state's water restrictions could curb revenue at water agencies. While rate increases can offset declining water use, utilities have little time to make them, and such increases may further discourage consumption.

Fitch Ratings said downgrades could occur if policy makers hesitate to make rate increases.

California isn't the only place these bonds are under scrutiny. Robert Fernandez, director of environmental, social and governance research at Boston-based Breckinridge Capital Advisors, said his firm sold bonds from at least one water authority in Texas because of inconsistent revenue and water supplies.

Breckinridge, which manages about $21.4 billion, uses 11 indicators to analyze how water availability, demand and oversight can affect an agency's ability to repay debt, looking for factors including adequate backup supplies and contingency planning, Mr. Fernandez said.

"We're not looking to say, 'we want to avoid all water systems in this area,'" he said. "We want to look for the ones that are well managed and know how to manage through these issues."

Sharlene Leurig, who directs the sustainable water infrastructure program at Ceres, a nonprofit group that promotes sustainable investing, said that while bondholders are beginning to pay more attention, the threat posed by water shortages is still poorly understood.

"I think we have a long way to go before those risks are properly disclosed and priced," she said.

Maintaining investor demand will be important in California, where officials are accelerating parts of a voter-approved plan to sell more than $7 billion in general obligation bonds to pay for new water projects. That plan includes grants to local authorities, who may sell their own bonds.

Gary Breaux, chief financial officer for the Metropolitan Water District of Southern California, a consortium of 26 cities and water authorities that provide drinking water to about 19 million people in cities including Los Angeles and San Diego, said he's spoken with investors to reassure them that the triple-A-rated agency has plenty of sources for water and isn't foreseeing effect on its budget. Several water agencies' recent bond sales were well received, he added.

"I think investors feel reassured that we're watching all these different variables and we'll take them into account when we set our next budget, as well as the rates," he said.

Jamison Feheley, head of banking for public finance at J.P. Morgan Chase & Co., said California issuers are well prepared by prior droughts and haven't had to adjust bond offerings, though investors are paying attention.

"There are a lot of discussions with investors and rating agencies about `what's the plan? How do you expect to manage the drought issue?'" he said.

Demand for water utility debt has grown nationwide since Detroit's bankruptcy, because those investors proved better-protected than those holding tax-supported bonds, said Matt Fabian, partner at Concord, Massachusetts-based research firm Municipal Market Analytics. And while water bills may go up as the drought goes on, they're still a small portion of most households' expenses.

"Frankly, they just need to charge more for it," he said. "Once they start laying in new capital, either to fund conservation, or reuse, or desalination or whatever, it's just going to cost a lot more money."

# # #

Disparity in conservation: San Mateo County residents have varying water cut mandates, efforts

SM Daily Journal | April 21, 2015 | Samantha Weigel

A new revision of state water officials' landmark drought mandates were released Saturday and while some are pleased as it expanded targets and eased requirements for a few, it also highlighted a disparity in conservation efforts across San Mateo County.

Gov. Jerry Brown aims to combat the fourth year of drought by ordering consumers to cut their 2013 levels by an aggregate 25 percent, which would effectively conserve 1.3 million acre-feet of water over the next nine months.

To achieve this lofty goal, the State Water Resources Control Board amended its proposed regulations by expanding to nine conservation tiers requiring varying cities and utilities to cut back between 8 percent and 36 percent.

"[The water board was] very responsive in the modifications they made to the regulations … in an attempt to more equitably allocate conservation across the state," said Nicole Sandkulla, CEO of the Bay Area Water Supply and Conservation Agency. "It certainly makes me feel optimistic that they'll continue to be willing to do the right thing as long as we all agree upon the objective. Unfortunately it's a bad drought, it's a difficult situation we're in right now."

Fleshing out landmark mandates

The public has until Wednesday to comment on the water board's proposal, which was amended after it considered nearly 250 comments that included fears the previous framework was unfair and unrealistic. Another revision will be released April 28 before the board takes a final vote at its May 5-6 meeting.

Justin Skarb, government and community relations manager with the California Water Service Company, said the water board's changes were "an important step in making sure you've got more individualized requirements for each of those varying areas across the state and taking circumstances into account such as climate, lot size, population, rainfall; all those are included when you expand tiers."

Although a number of local cities and utilities have either achieved or are close to hitting their conservation targets, others have a ways to go.

"It's almost like no matter where you're at, everyone has to cut back by maybe 5 percent or more roughly. It's a little bit more for all communities except for those communities with very large lawns and water usage; they're going to have to make significant changes," Sandkulla said.

The state considered summer 2014 water use to categorize different cities and utilities into conservation tiers that outline needing to cut 2013 levels by either 8 percent, 12 percent, 16 percent, 20 percent, 24 percent, 28 percent, 32 percent or 36 percent.

Conserving in San Mateo County

The water board also outlined how much various agencies have already cut back, illustrating who's been adapting to the drought the longest.

Cities or utilities that have already met and must main their conservation target include the San Francisco Public Utilities Commission and the California Water Service Company South San Francisco having both reached an 8 percent reduction.

Cities that have exceeded their targets include San Bruno, which has hit its 8 percent goal by conserving 9 percent; Daly City and Redwood City, which are required to cut back 8 percent and have each reduced 14 percent; Menlo Park, which has reached 27 percent and is ordered to reduce by 16 percent; and Burlingame, which has met its 16 percent target by conserving 17 percent since 2013.

The biggest guzzlers in the county who must reduce by 36 percent are Hillsborough residents and those in Cal Water's Bear Gulch District; which includes Atherton, Woodside and Portola Valley as well as unincorporated portions of Redwood City and the county.

While Hillsborough residents have already cut back 25 percent and are on their way to meeting the state's highest target, Bear Gulch customers have only reduced their 2013 levels by 11 percent.

Sandkulla said previous year's efforts won't cut it and those with large landscaped properties must make serious concessions.

"The biggest thing we can all do, assuming everyone cut back their indoor water use last year and shortened their showers and changed out their toilets, … reducing your outdoor water use is the best available single opportunity for savings," Sandkulla said.

Hillsborough's Assistant City Manager Kathy Leroux said the town is continuing to work on how to implement the regulations and she's confident continuing to educate residents will offer results.

"I think our numbers show how well our residents have done already at 25 percent. So I'm not saying achieving 36 percent will be easy, but our residents have always come through during drought times and done the right thing," Leroux said.

Skarb said Cal Water is preparing regulations and enforcement mandates but will aim to help its biggest users like those in the Bear Gulch district by offering incentives, rebates and educating consumers.

The state's proposed regulations also reduced conservation mandates for several communities including those on the coast; Foster City and Cal Water's Mid Peninsula District, which primarily serves San Mateo and San Carlos.

The Coastside County Water District; which serves Half Moon Bay, El Granada, Princeton as well as at Skylawn Funeral Home and Memorial Park and the Ocean Colony Golf Course; has achieved 7 percent of its 8 percent conservation goal.

As part of the more specific regulations, the state suggests residents make up for aggregate cutbacks that cannot be achieved by commercial customers — such as a golf course or cemetery. Coastside District Manager David Dickson said the utility is "already very close to the conservation standard largely as a result of residential conservation."

The Estero Municipal Improvement District, which serves Foster City, received some reprieve in the new regulations as it's now required to cut back 12 percent instead of 20 percent.

Foster City Public Works Director Jeff Moneda said he's still disappointed the state isn't basing the tiers on earlier year's data as residents have cut back 40 percent since 2010, but just 5 percent since 2013.

Moneda said he's confident continuing to educate customers will assist in meeting conservation goals, but remains concerned about the state's vague enforcement reporting requirements.

Currently, no Foster City resident has been issued fines for failing to adhere to conservation requirements but the city has confronted a few individuals who have failed to repair leaking irrigation systems. If written requests don't succeed, water wasters could receive fines between $100 and $500, Moneda said.

The Foster City Council met Monday night to review drought regulations and discuss sending additional input to the water board.

Next steps

The state is asking for public input through Wednesday while it quickly crafts the first drought mandates as it must adhere to the time sensitivity of the looming drought.

Sandkulla said her agency remains concerned about Brown's suggestion to create tiered pricing structures aimed at promoting conservation — which could conflict with Proposition 218 that limits agencies to charging for services based on costs, not penalization.

Overall, Sandkulla said she's appreciative of the state's changes and Dickson added even though some requirements may have been lessened for county residents, the need to conserve is as prevalent as ever.

“I don’t think it substantially changes the challenge we face,” Dickson said. “We still have to figure out how to use less water and we all should expect that the expectations for conservation will ultimately be stepped up unless we get some relief. And that doesn’t seem likely to happen within this calendar year.”

# # #

California landowners resist efforts to monitor groundwater

While landowners say they own the water underneath their land, others argue groundwater is a common resource.

CNBC.com | May 13, 2015 | Heesun Wee

In drought-parched California, there's a topic many private landowners remain steadfast about: Water well metering.

During normal precipitation years, surface water found in rivers, lakes and reservoirs is ample enough to supply roughly two-thirds of state water used annually. But during more recent dry years, farmers and drillers have been digging deeper for groundwater—precious liquid tucked underneath the earth's surface. Groundwater flows naturally to the top, or can be pumped to the surface through wells. Groundwater can account for half of total state water consumed in drought years.

The management of groundwater for the most part has been an inside issue among city water officials, agricultural guys and scientists. But in year four of California's historic drought, groundwater has exploded as everyone's problem.

Residents fills buckets with non-potable water from a tank set up in front of the Doyle Colony Fire Station on April 23, 2015 in Porterville, Calif. Private wells here have gone dry.
Getty Images

Residents fills buckets with non-potable water from a tank set up in front of the Doyle Colony Fire Station on April 23, 2015 in Porterville, Calif. Private wells here have gone dry.

"The mentality among landowners is, 'This is really my water.'"
-Thomas Harter, groundwater expert, UC Davis

In rural communities including unincorporated pockets of Porterville—north of Bakersfield, California—several hundred residents rely solely on privately pumped groundwater. But their wells are already dry, and they're struggling to cook, clean and bathe. Volunteers and local officials have installed emergency water tanks. And while Tulare County might be ground zero for the drought, groundwater management is a statewide dilemma.

Gov. Jerry Brown last year signed the state's first groundwater law, despite years of resistance from the farm lobby. The Sustainable Groundwater Management Act requires local districts to measure and report details on regional groundwater amounts. While documentation on an individual well-owner basis will not be mandated, the regional guidelines mean communities at least collectively have to account for how much groundwater they're extracting. And that likely means more well metering on the horizon.

"It's irresponsible that we don't say, 'Everybody's got to measure how much we're pumping and reporting,'" said Brian Stranko, head of the California water program at the Nature Conservancy. "If we don't measure it [groundwater use], we can't manage it. In many cases we don't know how much is being pumped and by whom," he said.

It's odd that tree-hugging California—with its thick stack of environmental rules—only recently adopted its first groundwater law. Part of why lies in the region's open West attitude.

As private landowners, your land is well, your land. But sourcing groundwater ownership can be trickier. And it depends on who you ask. When you drill down, say 1,000 feet, and pump up water, you're also potentially tapping your neighbors' groundwater from peripheral lands.

Such drilling activity is not illegal. And landowners argue they own the land and the water underneath, period. Full stop.

With no groundwater regulations until recently, the number of wells and pumps are estimates at best. "The mentality among landowners is, 'This is really my water,'" said Thomas Harter, a groundwater hydrologist at the University of California, Davis. Landowners think "'it's part of my property and I don't want anybody to look over my shoulder,'" he said.

That argument might have worked in normal precipitation years. But after decades of groundwater extraction, pockets of land have been sinking from Merced down to Bakersfield—at first by inches, and now by feet.

"There are large parts of the southern Central Valley that last year alone have sunk between six inches and a foot," Harter said.

And it might get worse before there's relief. Every year, the California Department of Water Resources manually surveys snowpack that melts into spring runoff. It's a key source of surface water for the state. Officials in April found snowpack had the lowest water content in more than six decades. Gov. Brown imposed mandatory statewide cuts in urban water use—the first ever.

# # #

Tapping the ocean for drinking water: State lays down the law
SF Gate | May 7, 2015 | Peter Fimrite

California adopted new rules Wednesday to help cities and water agencies figure out the best way to siphon water from the sea and turn it into drinking water without killing fish.

The plan, approved by the State Water Resources Control Board in Sacramento, marks the first time any state or country has developed environmental guidelines for building and operating desalination plants.

"It is a big deal," said Jonathan Bishop, chief deputy director of the water board. "It sets the ground rules for how to get a desalination facility permitted that is protective of marine life."

Adopting the rules is among a series of measures the state is taking to head off a water crisis caused by a fourth year of drought.

Experts agree that soon there won't be enough water for the state's population — 38 million people and climbing — while protecting fish and wildlife and their habitats. Dams and pipelines are costly, pose environmental issues and take years to build.

Desalination plants have the obvious attraction of tapping a limitless source of water, the ocean. Critics warn, however, that the plants kill fish as they suck in briny water, and spew greenhouse gases into the air from the energy they require to run.

The state's new rules seek to deal with some of those issues by requiring desalination plants to use subsurface intakes when possible, meaning seawater can be drawn in only from below the seabed. If open ocean intakes are necessary, they must have screens to keep from killing fish and other sea creatures.

Operators will have to use treated wastewater to dilute the salty brine that the desalination plants discharge after producing fresh water. If that is not possible, operators must place a device that rapidly mixes the brine with seawater at the end of the outfall. The salinity in the area near the outfall cannot increase by more than 2 parts per 1,000.

Bishop said technological improvements in recent years are making desalination plants a more attractive option for water providers.

"We have a number of local water districts, cities and entrepreneurs that are considering it, so we need to set ground rules," he said. "The drought also provides more incentive for people to look at all their options."

Seventeen desalination plants are in planning stages, including the $1 billion Carlsbad facility near San Diego, which is expected to open in a few months. It will be the largest desalination plant in the Western Hemisphere and serve more than 110,000 customers in San Diego County.

In the Bay Area, Concord is considering building a plant that would serve every major water agency in the Bay Area, including San Francisco's. That plant would sit in Mallard Slough outside Bay Point and draw from delta waters flowing into Suisun Bay.

A $400 million desalination plant is being planned in Monterey Bay. Other small plants are being considered in Santa Cruz and at Moss Landing.

Proposition 1, the $7.5 billion water bond that California voters passed last year, promised desalination along with new storage facilities, conservation and recycled water.

“It's not a panacea,” Bishop said. “You wouldn't think about replacing our water project with desalination, but there are communities along the coast that have very few options and they need to look at everything.”

Desalination facts

Desalination has been a concept since the fourth century B.C., when Aristotle proposed a system to condense seawater vapor.

The first crude plant was installed in 1862 in Key West, Fla., to support military personnel at Fort Zachary Taylor.

Plans to build desalination plants began in earnest in California in 1977, a year that, until now, was the worst drought year in the state’s recorded history.

Several Bay Area counties, including Marin, began studying desalination during a six-year drought ending in 1993. Most communities eventually steered clear because of the high cost.

# # #

San Jose, Santa Clara mayors drink recycled sewage to push expanding reclaimed water
SJ Mercury News | April 28, 2015 | Paul Rogers

SAN JOSE -- San Jose Mayor Sam Liccardo, Santa Clara Mayor Jamie Matthews and other Silicon Valley leaders on Monday took big gulps of recycled water -- filtered, cleaned and disinfected sewage -- to show that it is safe and should be a growing part of Silicon Valley's drinking water future.

"Delicious," said Liccardo, as cameras clicked.

"Good stuff!" said Matthews, as video rolled.

Capitalizing on public interest in water supply issues during California's historic drought, the pair appeared at a public water treatment plant in Alviso to unveil plans for an $800 million expansion of recycled water in Santa Clara County over the next 10 years.

Beau Goldie, CEO of the Santa Clara Valley Water District, speaks at a press conference calling for greater reuse of purified wastewater, Monday, April 27,
Beau Goldie, CEO of the Santa Clara Valley Water District, speaks at a press conference calling for greater reuse of purified wastewater, Monday, April 27, 2015, at the Silicon Valley Advanced Water Purification Center in Alviso, Calif. (Karl Mondon/Bay Area News Group)

Once derided as "toilet to tap," recycled water has been used in San Jose and other cities in Santa Clara County since 1997, but only for irrigating golf courses, landscaping and other nondrinking uses, such as in industrial cooling.

Under the new proposal, San Jose and the Santa Clara Valley Water District are calling for expanding that use from 20,000 acre-feet a year now to about 55,000 acre-feet a year -- or 20 percent of the county's total water demand -- by 2025. An acre-foot is about 325,851 gallons of water, or the amount that two Bay Area families of five use in a year.

And rather than using it only for landscaping, they hope to mix it with existing groundwater and serve it to back the public to drink. That's not commonly done in California, although Orange County residents have been consuming purified wastewater for the past seven years.

To speed along the project, the two mayors said Monday, Sacramento political leaders should allow them to suspend the state's landmark environmental law, the California Environmental Quality Act, which requires builders of large projects to draw up detailed studies of how new construction will affect smog, traffic, noise, wildlife and water quality. Doing an environmental impact report would add two years and $3 million to the project's costs, they said.

"We need the state of California to get the regulations out of the way," said Liccardo.

Exactly how, or whether, the law can be suspended for the project, however, was unclear Monday.

Liccardo and other leaders said they are hoping state Sen. Jim Beall, D-San Jose, can help them. But Beall has not introduced a bill, and the deadline for introducing new bills has already passed for this year.

A similar bill last year, AB 2417, by Assemblyman Adrin Nazarian, D-Van Nuys, that would have allowed recycled water pipelines less than 8 miles long to be built without the required environmental, or CEQA, review died in the state Senate over environmental opposition.

Environmental groups said Monday that even though they support recycled water, they will probably oppose efforts by Silicon Valley leaders to skirt a thorough review.

"While the project is likely to be very environmentally beneficial, the impacts need to be considered so construction can occur in ways that plan for the protection of air, water quality and human health," said Miriam Gordon, state director of Clean Water Action, an Oakland-based group.

CEQA forces government to share details of projects before they are built, said Kathryn Phillips, director of Sierra Club California.

"The purpose of CEQA is to make sure the public has access to information about large projects that are going into their community so they can feel comfortable that any environmental impacts that might result from that can be mitigated," she said. "It seems like an environmental impact review would be in order here."

The project may be eligible for an exemption from CEQA under an executive order that Gov. Jerry Brown issued April 1. Among its 31 drought actions was one suspending CEQA for some water projects. But Brown's exemption expires May 31, 2016, and because the expanded recycled water project is in its early stages, the board of the water district won't vote on the final project for up to two years, said Jim Fiedler, chief operating officer of the district, so it might not qualify.

On the board's agenda Tuesday is a measure to suspend competitive bidding for engineering studies on the project, in an amount up to $10 million. That could fast track the process, but also raised concerns.

"I'm very interested in expanding our purified water program. However, these single-source agreements are for a large sum of money, and I would like more information before I can authorize our CEO to move forward with them," said water district board member Barbara Keegan.

The full $800 million to expand the plant and pipe its water to percolation ponds in Los Gatos, South San Jose and other locations could be funded with state bond money, federal funds and higher water rates, district officials said. The cost of the water would be about $1,100 to $1,500 an acre-foot, compared to about $400 now for increasingly limited supplies of water from the Sacramento-San Joaquin River Delta and $2,000 to $3,000 for desalination.

In July, San Jose and the water district opened the new $72 million Silicon Valley Advanced Water Purification Center in Alviso, where the mayors and local leaders, including Silicon Valley Leadership Group CEO Carl Guardino, guzzled recycled water from glass beakers on Monday. The facility takes sewage treated to secondary levels at San Jose's wastewater treatment plant and further cleans it with microfilters, reverse osmosis and ultraviolet light. The final product is basically distilled water.

On Monday, water district officials said the water that political leaders drank for Monday's photo op cannot yet be legally served to the public unless it has more state approval. But they said it meets all state health standards to drink.

"It's excellent quality," said Gary Kremen, chairman of the water district's board, who called recycled water "drought proof."

"We've got to consider all of the options on the table, and this is one of them."

# # #

(This page intentionally left blank.)

New normal': Scientists predict less rain from here on out
SF Chronicle | April 18, 2015 | Kevin Fagan

What's gone wrong with the weather?

Ever since California began drying out four years ago, Noah Diffenbaugh and his crew of earth scientists at Stanford University have been working on that question. They're on a mission, like detectives breaking down a psychological profile of a bad guy — only this hunt is done with calculators and computer models.

Their bad guy is the drought, one of the worst in California's recorded history. And one of the most mysterious.

What's most clearly known is this: A huge dome of stagnant air has spent much of the past four winters parked off the West Coast, driving the storm path far north of California. In years past, it would periodically slide south, letting in rain to the lowlands and snow to the mountains. Now, it hardly budges.

That's where Diffenbaugh takes up the hunt. What has changed? Why did it change? And is that change permanent?

It's no exaggeration to say the future of California society hinges on the answers. Where we live, what our homes look like, what food we eat, what we build and where we build it — all of these depend on the reliability of water supplies.

State 'in a new climate'

Don't expect any happy dispatches from Diffenbaugh, a senior fellow at Stanford's Woods Institute for the Environment who grew up in the forests above Santa Cruz, and his eclectic crew of a dozen science sleuths — including a 25-year-old who runs one of the nation's most popular weather blogs. They work together as the cumbersomely named Climate and Earth System Dynamics Group, and as they help lead the scientific world's investigation into the state's epic dehydration, they're not finding a lot to smile about.

"California is in a new climate," Diffenbaugh said. "And that's a climate where droughts have already become much more likely, and will continue to be so in the coming years."

Note the word "likely": It's used often by this group, which couches its fact-based descriptions as carefully as a monk scrapes sand grains.

"You're ultimately trying to figure out how the world works, and a lot of what we do as scientists is fail," Diffenbaugh said. "We wrestle with all the tiny micro-challenges to try to get some answers, and that takes time and a lot of very careful work.

"It's a really chaotic system we have to study."

Meticulous crew

To make sense of the chaos, Diffenbaugh works with a dozen graduate and postdoctoral researchers carrying a wide gamut of strengths, from a specialist on Indian monsoon characteristics to a snowpack expert and Daniel Swain, the young weather blogger who gave a name to that huge, storm-diverting dome of high pressure that has now become known worldwide. He dubbed it the Ridiculously Resilient Ridge.

A boyishly fit man who seems younger than his 40 years, Diffenbaugh runs his team with an easy, collaborative manner. “Some people show their intelligence by talking about themselves; Noah shows his by asking really great questions,” said graduate student Justin Mankin.

But there’s nothing easy about what this crew does. The work is so painstaking and deliberate it can give dull a new meaning — to nonscientists, that is. To those paying close attention, it’s academic dynamite.

In two key reports, released in September and March, the Stanford team argued that the drought isn’t simply a one-off event that will soon revert to the old norm. More likely, the researchers said, it will be repeated in varying degrees of severity on a regular basis from now on.

What’s changed

This drought hasn’t been marked simply by a dearth of rain, but also by unusual heat, the team noted. That warmth — the average temperature in California in 2014 was 61.5 degrees, a record — points to human-caused climate change as one big reason for the drying out of California, the researchers believe.

They based their contention on weather records dating back to 1895. Combing through decades of statistics, graphic modeling and raw data from organizations including the National Oceanic and Atmospheric Administration, they compiled one set of scenarios based on weather patterns reflecting global warming — commonly pegged as a 1.6-degree rise in Earth’s average temperature over the past century. The other set reflected patterns that would have occurred if that heating had not happened.

They came to the conclusion that during the early and mid-20th century, big swings in temperature and precipitation occurred independently of each other, and only about a quarter of the time did California get a warm and dry year at the same time. But suddenly in the past two decades, 80 percent of the years have been warmer than average — coinciding with an unusually frequent surge of hot air across the Pacific toward the Western United States.

The Stanford team projects this trend to continue from here on out — translating into what Diffenbaugh says is the “new normal,” a future filled with warm and dry years about half the time, instead of a quarter. A big culprit in all this, the team says: global warming.

“No matter how you look at it, global warming is occurring, and this is increasing the risk of extreme events,” Diffenbaugh said. “We have to deal with the reality that we are in a new climate.”

In the state capital and much of the scientific community, the contention that human-caused climate change is helping drive the drought is not a revolutionary conclusion. But there are about two dozen climate-change and earth science groups around the country doing vigorous research on the drought, and not all think global warming is as a big a factor as Diffenbaugh does.

Alternative analysis

In November, for example, a NOAA report concluded that variable ocean temperatures — not a warming atmosphere — were encouraging the persistence of storm-blocking high pressure off the West Coast. The lead author of that report, researcher Richard Seager of New York, said in an interview that ridge or no ridge, the atypical warming trend in the West doesn’t play a core role in the drought.

“My view is that the drought is really a precipitation-driven drought, and that when they look at the contribution of greenhouse gas-driven warming trends, they are looking at a rather second-order effect,” said Seager, a climate scientist at Columbia University’s Lamont-Doherty Earth Observatory.

“They’re not totally off the mark, but I think the temperature is a secondary part of this drought.”

Diffenbaugh’s analysis, however, holds greater sway in Sacramento.

“In some scientific reports you look for one point where there is a definitive statement, and it’s hard to find one,” said state Natural Resources Secretary John Laird, one of the most influential figures for shaping California’s environmental policy. “The trouble is, that kind of statement is always helpful to me to get people’s attention, because my job is to make sure the rank and file and the water decision makers all understand the science of what’s going on.

“I find it very handy that Noah’s papers are so clear. He helps people understand the science of the drought, and that is no easy thing.”

In popular perception, probably the biggest contribution the Stanford team has made to drought study has been the naming of that stubborn high-pressure system off the coast: the Ridiculously Resilient Ridge, or, for short, the Triple R.

Swain coined the name on his California Weather blog in 2013. On a site where each of Swain’s biweekly or so posts draws thousands of comments — he says his metrics show a million annual readers — it didn’t take long for the label to stick, and to spread like one of the jet streams he writes about.

The Triple R deflects winter storm systems north, where they then rush over Canada and pour south to dump rain and snow on the East Coast. Global warming, again, is probably stoking the Triple R's resiliency, the Stanford group says — though nobody has figured out precisely why the ridge has parked off the coast like a stalled bus.

"The features in the atmosphere are usually transient, but this ridge has been particularly persistent," Swain said recently, cobbling up animation on his computer showing the latest flow pattern of warm and cold fronts shoved around by the Triple R. "There probably isn't a single answer to why the Triple R is here, but we keep looking into it. It's pretty weird."

Warm, dry future

The Triple R will in all likelihood dissipate at some point, the team contends — but that doesn't mean everything will go back to normal.

By 2040, Diffenbaugh's numbers predict, low-rain years in California will consistently be warmer than the winters we've been used to. Even in years that get more precipitation than 2015, soil will become parched more quickly, snow will melt faster, and less water will be available in streams, lakes and the ground than in earlier eras.

In other words, more extra-nasty droughts are in our future. With some sloppy relief in between.

But weather science isn't straightforward. On one hand, Diffenbaugh says, global warming has indeed increased the probability of more hot years in conjunction with little rain. On the other, global warming also increases the chances of extremely wet years now and then.

"We're not saying California will become a desert," he said. "We just say the risk of drought in future years is increasing.

"And though I don't study economics or policy, I do know this: We are in a different climate than we were when our current infrastructure for water was built. And decisions on how to handle our water need to be made on the current climate, not the old climate."

From forest to fellow

The idea that Diffenbaugh would one day be a computer-modeling scientist making such pronouncements wasn't exactly in the cards when he was a child.

He was raised at Mount Madonna, a Santa Cruz Mountains community based around the spiritual discipline of Ashtanga Yoga, which holds paramount the pursuit of peace and selfless service. His parents are both educators in the area, and growing up included trips to India to work with the underprivileged.

"I did not grow up with computers," Diffenbaugh said. "I grew up in the mountains, in touch with my physical surroundings, and was 9 when the first TV came to my house."

But being more in tune with nature did not mean his education was shorted. He got into Stanford to study medicine — though that didn't last long.

"I was premed right up until I took my first chemistry mid-term," he said. "Not for me. Then I discovered earth system science, and that really unlocked things for me." He was hooked.

He also got hooked on his soon-to-be wife, Polly, a fellow Stanford science student who now is a clinical associate at the university. They married 18 years ago, and en route to Diffenbaugh's doctorate in earth sciences at UC Santa Cruz and his professorship at Purdue University, they had two daughters, now 11 and 13, and a son, now 16.

Today, they live in a tidy, spacious house overlooking the Stanford campus, surrounded by trees and little noise other than birds. Posted prominently inside the front entrance on a table is a statuette of Hanuman, an Indian icon of selfless service.

The typical family conversation flows from the makeup of neuroscience and drinking water needs in the Third World to the merits of "Lord of the Rings" with the ease of a downhill stream. There's no shortage of good-natured ribbing of Dad — they're used to seeing him on national TV, at public appearances and on the Internet, where a geeky climate change music video shows him sitting alongside an artificially singing Al Gore.

Daughter his 'coach'

"I'm coaching him on the importance of speaking with his head high, and smiling," Ela, the 13-year-old, said as the family headed to a local farmers' market one recent Sunday — a weekly tradition. "I see constant upward improvement."

Diffenbaugh raised an eyebrow and tried on one of the suggested smiles.

"I'm not sure what people think of when they look at a scientist — maybe they'd assume he'd be a total nerd with nerd-nation glasses, sitting in a dark room somewhere all day," said Jeffrey Koseff, director of the Stanford Woods Institute for the Environment. "But that's not Noah.

"It doesn't surprise me that someone raised like he was is curious and willing to ask hard questions."

Clever with a quip

If you're looking for a lot of good news from Diffenbaugh's group, don't. Those conclusions state officials find so useful are usually grim. But finding the nitty-gritty of that within the body of the reports, which have succinct conclusions but come in densely worded packages of statistics and hyper-referenced contentions, can be tough sledding.

This is where Swain has come in particularly handy. His ability to coin a phrase and couch trends in lively language make him more user-friendly than most scientists.

“Daniel’s got a passion for the subject, for sure, but he’s also got a knack for a phrase,” said Geoff McGhee, creative director for media at Stanford’s Bill Lane Center for the American West. “That Triple R name, his blog — he came along just at the right time for studying the drought.”

Given the depth of his research, most people are surprised when they get their first look at Swain. He is the youngest in Diffenbaugh’s group, looking more like a slightly shy, gawky teenager than a man set to earn his doctorate next year.

Born to a social worker mom and a schoolteacher dad, as a schoolboy in San Rafael he was scolded by instructors for sneaking onto school computers to study weather. The scolding eased up when he put his obsession to use, building a weather station on his parents’ roof and creating his blog.

He expanded the blog as he earned a bachelor’s degree in atmospheric science at UC Davis in 2011 before moving to Stanford, where he has been working on a doctorate in earth system science. Today, he gets a steady stream of correspondence from his blog readers — everyone from researchers in Europe to a contingent that thinks aliens are concocting the drought. The volume got so huge he had to go to larger computer servers to handle the load.

His explication of the Triple R name — to which he’s added “Redux,” since it came back this past winter — gets the same carefully parsed treatment reserved for describing, say, a variation in temperature degrees across meridians.

“The Triple R is arguably an accurate description of a fairly complex geophysical phenomenon,” Swain said. “It is a ridge. It’s not permanent, it’s resilient. And then of course, it is anomalous and not something you’d expect to see — so it’s ridiculous.

“Hey, it’s the age of the Internet,” he said with a shrug. “You’ve gotta have some kind of hook now and then.”

Dead serious in the lab

Knacks and hooks come only at the tail end of the research, though. During the heavy lifting, it’s all a dead serious process of relentless tweaking, refining, fact-finding, and then tweaking again.

At least once a week, the Stanford crew gathers in a brightly lit conference room to go over slides of data, mapping and charts. One recent afternoon found the team staring hard at a projection screen and slicing fractions with even-toned debate — nobody ever raises a voice, nobody looks at a phone, every word is precise.

One chart showed extreme heat between 1975 and 2015 in California spiking so high at times it left the screen. Seemed clear enough, but just where the baseline figures should start to give the best representation year by year wasn’t quite settled.

“We could use a varying number of statistical inputs,” Swain suggested.

“Trends reflective of trends,” Diffenbaugh added.

Deepti Singh, the graduate student presenting the latest figures, noted that the median temperatures year by year would be useful, as well as “calculating spatial averages.”

Critical to understand

“Yes, that is the kind of thing that could be calculated,” Diffenbaugh said, leaning back in his seat and looking mock-serious. The team laughed. It was the kind of joke only a batch of scientists who spend most of their waking hours doing calculations could understand, let alone appreciate. Of course they can calculate it: They calculate literally everything.

“The most crucial thing we have to understand next is the intersection between our physical climate system — heat, rain, wind — and people and other living things, and how they interact,” Diffenbaugh said. “I always make it clear that politically, I don’t have a horse in the race. My role is to be objective about the evidence.

“But I do know this,” he said. “We really do have relevant information to decisions being made right now. Actionable decisions can well be different if our paper is right. If people understand that we do have a different climate now, and this drought is not just an anomalous event, they can make better decisions.

“That’s our job. To help people understand so they can make decisions on risk going forward. To always keep trying to get it right. It doesn’t end.”

# # #

(This page intentionally left blank.)

Big north-to-south California water sale dries up
Sacramento Bee | April 10, 2015 | Dale Kasler

Read more here: http://www.sacbee.com/news/state/california/water-and-drought/article18232868.html#storylink=cpy

When the water supply is tight in California, the product often flows to where the money is. Typically, that means north to south.

In the record-breaking drought of 2015, however, practically no one has a drop to spare. That means the buying and selling of water can grind to a halt, even with jaw-dropping prices on the table.

That appears to be the case with a mammoth deal engineered by the Metropolitan Water District of Southern California and a group of Sacramento Valley rice farmers.

Earlier this year, Metropolitan and several other purchasers tentatively arranged to pay $80 million for 37 billion gallons of agricultural water from the Feather River. The price: a whopping $700 an acre-foot. It would have been one of the largest and costliest water sales the state has ever seen.

Now the deal is largely falling apart. The reason: Many of the farmers were told this week their own supplies are being curtailed because of the drought. As a result, most of them are invoking opt-out clauses and canceling the sales.

The deal "dried up, so to speak," said Ted Trimble, general manager of the Western Canal Water District. "If we're water-short, we're not going to move water out of the area."

The Butte County district is backing out because its annual allocation from the State Water Project has been cut in half, the maximum cutback allowed under its contract with the Department of Water Resources. The State Water Project, which includes Oroville Reservoir on the Feather River and the California Aqueduct, provides water to about 25 million Californians, including water agencies in parts of the Bay Area as well as the San Diego and Los Angeles metro areas.

Another would-be water seller from Butte County, the Richvale Irrigation District, got the same news from the state and also is backing out of the deal.

"It won't happen. We won't sell water in a curtailment. The water's needed up here," said Sean Earley, general manager at Richvale.

All told, Metropolitan figures it might get 20 percent of the water that it bargained for, said Roger Patterson, assistant general manager with the Los Angeles agency. Metropolitan sells water wholesale to 26 agencies serving 19 million people throughout Southern California.

The deal would have provided about 3 percent to 5 percent of Metropolitan's annual delivery schedule and "it's not going to be a make-or-break situation," added General Manager Jeffrey Kightlinger. "It is going to make it tougher."

The agency delivers more than 1.7 million acre-feet of water to its customers annually. An acre-foot is 326,000 gallons, roughly a year's supply for two Southern California households.

Metropolitan's experience raises questions about one of the coping mechanisms California has traditionally used to deal with dry years. It's become increasingly common for urban agencies and some agricultural districts to buy water on the state's informal spot market to help ease shortages. Often the sellers are the rice farmers in the Sacramento Valley, where water is generally more plentiful and their legal rights to that water are comparatively strong.

The wheeling and dealing has generated criticism. With some Sacramento Valley farmers getting water for as little as $12 an acre-foot, environmentalists and others accuse growers of selling out agriculture and their rural communities to make a huge profit. The farmers say they'd rather plant a crop, but are agreeing to water sales to help the state wrestle with shortages.

"These guys are reluctant sellers," Earley said. "They would just as soon farm."

In any event, water sales are proving difficult to close in 2015. "We're out talking to people," Kightlinger said. "But if there are any (deals), they're likely to be small. Water is really scarce this year."

Tim Quinn, a former Metropolitan official and current executive director of the Association of California Water Agencies, said the market isn't dead but it is suffering from an extreme supply shortage.

"There will probably be a market (this year), but it will be a constrained market at a high price," Quinn said. "You can expect lots of emotion and high prices. ... Water is really valuable in this economy."

One big deal is pending on the west side of the Central Valley.

Several agricultural districts led by Westlands Water District, which serves a vast area in the parched San Joaquin Valley, have a tentative deal to buy up to 200,000 acre-feet of water from Sacramento Valley growers who draw from the Sacramento River. For the second straight year, Westlands has been told it is not getting any water from the federal government's Central Valley Project.

The Central Valley Project, operated by the Bureau of Reclamation, is the federal system of dams, canals and pumps that moves water from Shasta and Folsom reservoirs, through the Sacramento-San Joaquin Delta, and on to farm and urban areas as far south as Mendota in Fresno County.

Westlands is paying $665 an acre-foot for the Sacramento Valley water. That's substantially higher than the $300 to $400 an acre-foot Westlands paid when it made a spot market deal with many of the same growers last year.

But it's uncertain if this year's deal will go through. Tom Birmingham, general manager of Westlands, said the Sacramento River water users won't complete the sale if they don't get their scheduled allotment of water from the Central Valley Project.

The Sacramento River customers, who have unusually strong rights under the state's byzantine water rights system, are supposed to get 75 percent of their typical allocation, as they did last year. But that could change, and if the growers face a more severe cutback, they could back out of the sale. The U.S. Bureau of Reclamation is expected to make a determination in late April.

If the deal falls apart, Westland's situation will go from bad to worse, Birmingham said. As it is, he said, as much as half the land in Westlands is likely to be idled this year, taking tens of thousands of acres out of production. The water from the Sacramento Valley wouldn't be transferred south until later this fall, in order to comply with a host of environmental concerns, and would be used in next year's planting.

"It's critically important to the people who live and work on the west side of the San Joaquin Valley," he said. "This water is going to provide jobs for people."

Closer to Sacramento, the Tehama-Colusa Canal Authority represents farmers in Yolo and three other counties who don't have particularly strong water rights and aren't getting any Central Valley Project water this year. Tehama-Colusa is in negotiations to buy water from some of the same Sacramento River growers who are dealing with Westlands, and also is hoping its business partners are able to complete the sale.

"We're obviously waiting with bated breath," said Jeff Sutton, general manager of Tehama-Colusa.

Sutton said Tehama-Colusa farmers bought 60,000 acre-feet of water on the open market last year for around $425 an acre-foot.

Normally, water from the Central Valley Project costs the agency's farmers $40 to $75 an acre-foot. Paying $425 an acre-foot "is not sustainable in the long term," Sutton said. "But for folks with permanent crops and nowhere to turn ... it was a lifeline for folks to live another day." The Tehama-Colusa district is known for almonds, walnuts, pistachios and other tree crops that can't be fallowed.

Some water agencies have entered into long-term purchase contracts. Metropolitan, for instance, is in the midst of a 35-year deal to buy water from the Palo Verde Irrigation District, which lies along the Colorado River in Riverside and Imperial counties. Under the contract, Metropolitan

has the right to direct Palo Verde's farmers to fallow up to 28 percent of their land each year to make water available.

The Palo Verde arrangement is better than trying to make spot-market deals on relatively short notice, said Patterson, Metropolitan's assistant general manager.

"It's more predictable," he said.

# # #

Hetch Hetchy Makes San Franciscans a Touch Tetchy
Environmentalists want to tear down a dam, but their usual liberal allies balk at surrendering the water.
Wall Street Journal | May 8, 2015 | Allysia Finley

Naturalist John Muir, who founded the Sierra Club in 1892, helped spawn one of the most formidable forces in U.S. politics—but he couldn't save Yosemite's Hetch Hetchy Valley.

"Monopolizing San Francisco capitalists," Mr. Muir wrote in a 1908 Sierra Club Bulletin, are "trying with a lot of sinful ingenuity to get the Government's permission to dam and destroy the Hetch Hetchy Valley for a reservoir, simply that comparatively private gain may be made out of universal public loss."

In 1913, the Democratic Congress passed and President Woodrow Wilson signed the Raker Act, authorizing San Francisco to build dams, powerhouses and pipelines to shuttle water and hydropower from Yosemite to the Bay Area. Contemplating the valley that would soon be a lake, Mr. Muir lamented: "The destruction of the charming groves and gardens, the finest in all California, goes to my heart."

A century later, environmentalists have revived Mr. Muir's crusade amid perhaps the most severe drought in over a millennium. Last month, a group of environmental activists organized under the sobriquet Restore Hetch Hetchy sued in state court to raze the O'Shaughnessy Dam and drain the reservoir, which now supplies water and power to 2.6 million Bay Area residents. If successful, the lawsuit would create a severe water shortage in the Bay Area, which has been among the areas least affected by the drought in the West. The lawsuit, a new front in a decades-long internecine battle between San Francisco grandees and environmentalists, is exposing some peculiar contradictions of liberal politics.

According to the lawsuit, the Hetch Hetchy project violates the California constitution's prohibition of "waste or unreasonable use" of water resources, which must be put to "beneficial use thereof in the interest of the people and for the public welfare."

The environmentalists maintain that it is "unreasonable" that the reservoir obstructs their scenic views of "aquatic birds, fish and other aquatic animals, and terrestrial species, including black bears, deer, and other species." They also grouse that people "cannot fish in the river but must resort to a diminished fishing experience from the shoreline of the reservoir." Nor can people swim, but it's not as though there would be much swimming if the reservoir were removed and the natural flow of the Tuolumne River restored.

The environmentalists don't protest that wildlife is being harmed. Rather, their gripe is that people are being deprived of recreational and aesthetic enjoyment. The group estimates Hetch Hetchy Valley's so-called existence value—which captures "individuals' strong desires to be able to visit a restored Hetch Hetchy Valley in the future, to realize their ecological ethics, their

altruism toward others and the environment, and the desire to benefit future generations"—at between $44 billion and $113 billion based on their review of other dam removals.

Environmentalists have been petitioning national and local politicians to bulldoze the dam for decades. They got a major assist in 1987 when Ronald Reagan's last secretary of interior, Donald Hodel, proposed draining the reservoir. However, San Francisco politicians revolted and scuttled the idea.

San Francisco Mayor Dianne Feinstein, now a U.S. senator, called Hetch Hetchy water her "birthright" and proclaimed that she would "'do all in my power" to fight the teardown. "All this is for an expanded campground?" Ms. Feinstein mused. "It's dumb, dumb, dumb."

In November 2012, San Francisco environmentalists bypassed politicians and sought voter approval for a local ballot measure to prepare a plan to drain the reservoir and develop alternative water and power sources. The city's ruling class, including Rep. Nancy Pelosi, Mayor Ed Lee, Sen. Feinstein and all 11 members of the board of supervisors, opposed the proposition, which they warned would jack up residents' water and power costs.

Hetch Hetchy supplies the Bay Area with pristine water, which requires little treatment and energy for pumping, at low cost. Its hydropower is also cheap and helps offset the city's pricey renewables such as solar.

A 2006 study by the state Department of Water Resources estimated that demolishing the Hetch Hetchy project and replacing the Bay Area's water and power supply would cost between $3 billion to $10 billion (in 2005 dollars). The San Francisco Public Utilities Commission calculated that the endeavor would raise the average utility customer's rates by between $709 and $2,277 per year and that the loss of hydropower would cost the city at least $41 million annually. Only 23% of city voters backed the 2012 measure.

Yet environmentalists hope that judges, who have assisted several of their coups, will be more receptive. Recall that in 2007 a federal court ordered restrictions on water pumping in the Sacramento-San Joaquin River Delta to protect the delta smelt.

The environmentalists have found an unlikely ally in farmers. Last year, the Fresno-based Center for Environmental Science, Accuracy and Reliability—whose executive director is the general counsel for the largest agricultural water districts in the U.S.—sued the National Park Service in federal court for violating the Endangered Species Act and National Environmental Policy Act. According to the lawsuit, Hetch Hetchy illegally diverts freshwater from the Tuolumne River. San Francisco, they argue, is siphoning off water before it reaches the delta and thus diminishing the supply available to agriculture and wildlife.

San Francisco elites, the argument goes, are grabbing cheap water to the detriment of fish and poor farmers. If the city's liberal politicians care as much about social inequality and the environment as they profess, why won't they spread the water around?

Ms. Finley is an editorial writer for the Journal.

# # #

(This page intentionally left blank.)

California Drought: Century-Old Fight Over Hetch Hetchy Simmers On
NBC News | May 5, 2015 | Matt DeLuca

Deep under the shimmering waters of the Hetch Hetchy reservoir in California there's a valley that rivals the beauty of Yosemite, a jewel in the crown of the national park system.

Some are calling, again, for the reservoir flooded nearly 100 years ago to be drained and the valley that naturalist John Muir called a "mountain temple" to emerge.

There's one major problem, critics say: The reservoir is a major source of water for 2.4 million Bay Area citizens even as the state struggles with one of the worst droughts in modern history.

A California activist group's petition challenging the legality of Hetch Hetchy has set off the latest battle in a century-old fight over the reservoir and the Yosemite valley that it fills.

"Draining the reservoir, an essential part of the [Hetch Hetchy] System, could be a serious threat to the users who depend on it and to the California economy," Nicole Sandkulla, CEO of the Bay Area Water Supply and Conservation Agency, said in a statement. BAWSCA was named as a co-defendant in the recent court filing by Restore Hetch Hetchy.

Often considered a sibling to the larger Yosemite Valley, the Hetch Hetchy Valley lies entirely within the bounds of Yosemite National Park, and its grassy floor and granite walls were widely admired before the federal government gave the go-ahead in 1913 to build the O'Shaughnessy Dam. The fight around the original dam proposal was one of the first major environmental causes in American history.

The petition filed by Restore Hetch Hetchy in Tuolumne County Superior Court on April 21 seeks to challenge the existence of the dam and the reservoir by saying they violate California's state constitution, which requires that the supply of water be divvied up for "the greatest number of beneficial uses which the supply can yield."

"Operating a dam and reservoir in an iconic valley within Yosemite National Park is not, in 2015, a reasonable method of diverting water for municipal uses," the petition states. It also asks for San Francisco to come up with engineering and financial plans that would make it possible to drain the reservoir and restore the valley.

The San Francisco Public Utilities Commission thinks the new suit is "baseless," spokesman Tyrone Jue said. He emphasized that the entire Hetch Hetchy system supplies water to about 7 percent of the state's population, and that reports have outlined costs of between $3 billion and $10 billion to take down the dam and restore the valley.

"The idea that you would be encouraging a study looking at draining the water supply for that number of people during California's worst drought doesn't make a lot of sense," Jue said.

The idea of draining Hetch Hetchy will likely strike many others the same way, as the state endures the fourth year of a drought that shows no sign of slowing down. The reservoir was at 75 percent capacity as of May 5, totaling 269,963 acre-feet of water (an acre-foot is nearly 326,000 gallons). For that same date, California's Department of Water Resources said the snowpack -- an important measure that helps determine how much water the state may have down the road -- was at 1 percent of normal.

"There are real challenges in California when it comes to keeping our rivers healthy, keeping the Bay Delta healthy, and determining how much water gets diverted to rivers and farms," said Restore Hetch Hetchy executive director Spreck Rosekrans. "Hetch Hetchy is not that sort of issue. Not one drop of water needs to be lost, it can all be captured downstream. It's not really about water use, it's about land use."

Rosekrans said that with some additional upgrades the rest of the Hetch Hetchy System, which includes 8 other reservoirs, could handle the water currently stored behind O'Shaughnessy Dam. In 2006, graduate student Sarah Null and Jay Lund, a professor at the University of California, Davis, published a report that found the dam could be removed without much effect on the water supply -- though San Francisco would have to hash out deals with the water agencies that manage those other reservoirs.

"You could take out this dam with really negligible water scarcity to urban and agricultural users," said Null, now assistant professor of water resource management at Utah State University.

There would be other costs that would come with removing the dam, however, including the loss of approximately $12 million in hydropower a year, according to their study. It could also result in a spike in Bay Area water bills, in part due to the loss of a rare filtration waiver that comes with Hetch Hetchy's unusually pure waters. Null said that their work shows that it would be possible to take down the dam without losing significant amounts of water -- and that more dams don't always guarantee a greater water supply.

"At some point, and California is learning this in particular now, the challenges have to do with simply not having enough water," Null said. "So having lots of dams, you basically have a lot of cups that might stay empty. More cups don't necessarily mean more water."

Over the years, the idea of removing the dam has been entertained by people from across the political spectrum, from the Sierra Club to Republican White Houses. In the 1980s, President Ronald Reagan's Interior Secretary, Donald Hodel, was in favor of draining the reservoir and restoring Hetch Hetchy to its natural state, telling the Los Angeles Times in 1987 that it could open up "a second Yosemite Valley." President George W. Bush put a line in his fiscal year 2008 budget proposal that would have given the National Park Service $7 million to look at draining Hetch Hetchy, but that idea was scuttled by the House of Representatives.

But in San Francisco, proposals to pull down the dam have been consistently sunk. Nearly 77 percent of voters in San Francisco County voted against a 2012 ballot proposition that would have allocated $8 million toward Hetch Hetchy restoration plans. Senior California Senator Dianne Feinstein has opposed the idea of draining Hetch Hetchy since she was mayor of San Francisco in the 1980s. The senator's office declined to comment for this article.

If these objections are ever overcome and a decision is made to remove the dam, what would that process even look like?

Objective information around reclamation for the Hetch Hetchy Valley is scattered, but some does exist. A 1988 analysis by the Bureau of Reclamation investigated possible replacements for the water and power-generating capacity of the O'Shaugnessy Dam, and found options that "appeared promising for further study." Another report, this one published in 2004 by researchers at the University of Wisconsin, looked at whether the reservoir could be drained in stages over many years, giving plants and other wildlife time to take root against invasive species.

And the idea of removing a dam has become increasingly accepted in recent decades. More than 1,000 dams have come down across the United States in the past four decades, and in a recent review published in the journal Science researchers from the U.S. Geological Survey and U.S. Forest Service found that most rivers recover within a matter of years.

For now, Rosekrans said he thinks RHH has a "strong case," and that he is waiting for San Francisco to respond to the suit.

"It's our hope that we get a declaratory ruling and that San Francisco decides they don't want to be out of compliance with California law and they develop and implement a plan that will restore the valley and return it to the American people," Rosekrans said.

# # #

(This page intentionally left blank.)

Earth Log: SF groups oppose lawsuit aimed at emptying Hetch Hetchy
Fresno BEE | April 27, 2015 | Mark Grossi

The health, safety and economic well-being of 1.7 million residents and 30,000 businesses would be threatened if Hetch Hetchy Reservoir in Yosemite National Park is drained, says a San Francisco water agency in reaction to a new lawsuit over the reservoir.

Welcome to the next chapter in the fight over San Francisco's reservoir in California's premier national park. Environmentalists continue the long-term battle to get water out of a glacially sculpted valley. San Francisco keeps saying it makes no sense.

And so the debate has gone for decade after decade since famed conservationist John Muir lost the fight against the reservoir a century ago.

The health, safety and economic concerns come from one of the defendants named in a lawsuit filed last week over restoring Hetch Hetchy Valley. The group is the Bay Area Water Supply and Conservation Agency (BAWSCA), representing 26 member agencies that buy Hetch Hetchy water.

Our lawsuit story last week explained that the advocacy group Restore Hetch Hetchy was challenging the reservoir based on a state law that refers to diverting water in a beneficial way.

The plaintiff says the water could be captured downstream, away from Yosemite, without losing a drop of supply. It is not beneficial to capture the water in the national park, Restore Hetch Hetchy says.

Bay Area officials say draining the reservoir would be expensive and unwise. The cost would be at least $10 billion, says Jim Wunderman, president of the Bay Area Council, business-sponsored, public-policy advocacy organization for the nine-county Bay Area.

"The court should quickly dismiss this lawsuit and let us focus on the real threat of combating California's drought," he said.

BAWSCA Chief Executive Officer Nicole Sandkulla added that thorough plans would be needed, as well as legally enforceable agreements on water rights, ownership and operating responsibilities.

"Any such efforts must not delay the current $4.8 billion program to rebuild the Bay Area's existing earthquake-vulnerable water system," she says.

The lawsuit is filed in Tuloumne County Superior Court.

# # #

(This page intentionally left blank.)

Group sues over Hetch Hetchy
The Union Democrat | April 21, 2015 | Craig Cassidy

An environmental group which has sought for years to tear down O'Shaughnessy Dam, to restore the Hetch Hetchy Valley in Yosemite National Park, filed a lawsuit Tuesday in Tuolumne County Superior Court seeking to force further studies on the dam's removal.

The lawsuit was filed by attorneys representing Oakland-based Restore Hetch Hetchy on what would have been conservationist John Muir's 177th birthday. Muir, founder of the Sierra Club, fought the reservoir's construction before he died in 1914.

The lawsuit asks the court for "declaratory relief" and an order requiring the City and County of San Francisco to prepare an engineering and financing plan for routing water to the Bay Area without the reservoir.

The group hopes such a study "results in removal of the Hetch Hetchy Reservoir, restoration of natural flow levels of the Tuolumne River through Hetch Hetchy Valley, and system improvements that will result in no loss of water supply reliability or power production."

Restore Hetch Hetchy, based in Oakland, has pushed for removal of the dam since 1999.

Lobbying by the group and others prompted former Gov. Arnold Schwarzenegger to commission a study in 2006 looking at the feasibility of tearing the dam down.

It found removing O'Shaughnessy, restoring the valley and reworking the water storage and delivery system for San Francisco would cost between $3 billion and $10 billion.

Restore Hetch Hetchy six years later backed a ballot initiative, Proposition F, that would have required San Francisco to develop a plan like that requested in the lawsuit. Proposition F failed to win the support of Bay Area voters.

The group's president Spreck Rosekrans said Tuesday the study commissioned by Schwarzenegger didn't go far enough.

"The original task that was given for the Schwarzenegger study was to look at the cost and the value of restoration. They never looked at the value," he said. "This is the next step — to have a conversation about the value of a restored Hetch Hetchy."

The lawsuit focuses on a section of the California Constitution that requires water be put to the "greatest number" of "beneficial uses." The dam's construction and reservoir's filling a century ago "eliminated or seriously impaired" the environmental and recreational benefits of Hetch Hetchy Valley, the lawsuit contends.

State law also prohibits "unreasonable methods of diversion," which the Hetch Hetchy system embodies, the lawsuit argues.

"We have no quibble with San Francisco's use of Tuolumne River water. We want them to take the water after it flows through Yosemite National Park and return the Valley to the American people," Rosekrans said.

"We really are stressing that we think water supplies can be kept whole. We don't want to take anyone's water. We just want Yosemite back."

Tyrone Jue, spokesman for the San Francisco Public Utilities Commission said the commission has not reviewed the lawsuit so has not formulated a response.

“I cannot comment right now. But, at the same time, we are in one of California's worst droughts in history and we are going to be double challenged with providing water to our 2.6 million customers," he said.

"It is a challenge in that it is asking for removal of a source of water for much of the Bay Area."

# # #